

#### ABSTRACT OF THE DISCLOSURE

A method of assembling tyres for vehicle wheels includes disposing a carcass structure on a primary drum, disposing a belt structure on an auxiliary drum, picking up the belt structure from the auxiliary drum to transfer the belt structure to a position coaxially centered with respect to the carcass structure, and applying a tread band onto the belt structure. The carcass structure includes at least one carcass ply in engagement with annular anchoring structures axially spaced apart from each other. The belt structure includes at least one belt layer. Applying the tread band is carried out by winding up at least one continuous strip element of elastomer material in contiguous circumferential coils around the belt structure. An apparatus for assembling tyres for vehicle wheels includes the primary drum, the auxiliary drum, at least one unit for applying a tread band onto a belt structure, and a transfer member.